Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of
Amendment of the Commission's Rules
Governing Hearing Aid Compatible
Mobile Handsets

WT Docket No. 07-250

Subject: WT Docket No. 07-250

PerrineCrest Radio Consulting (PRC) submits the
following comments in response to the Notice of Proposed Rulemaking (NPRM) published at 72 Fed. Reg. 65494 and styled "Amendment of the Commission's Rules Governing Hearing Aid-Compatible Mobile Handsets,

Para 27 Regarding "in-store" testing.
In-store testing using the live network does not guarantee worst case conditions for the user such as use of maximum transmit power. The FCC and industry should consider if other test options might improve the users ability to select a phone. One example is testing by use of a special built in standard test mode that guarantees high power transmission and plays a prerecorded message to the phones audio output. Using such a test mode the phone would not have to be connected to the network and thus could be used in more store locations than for live call testing.

68. We propose to adopt these reporting criteria and ask commenters to address whether they
capture the appropriate information and level of detail…….
PRC supports the request for additional information for the report. The following information may improve the usefulness of the reports.

In addition to items in para 65 the FCC should consider if the following information would improve the reports.

1) Details of all phone models currently available including: provider model (if different), manufacturer's model, associated FCC ID, device air interfaces, device frequency bands, approximate HAC testing dates (if tested), HAC rating. Date ranges when the model is available.
2) Details in addition to #1, for phones used for HAC compliance including: product refresh status, and marketing functionality level.
3) information justifying compliance with the proposed product refresh limits and functionality level limits.

4) Demarcations for determining HAC related model variation including variations for provider specific models.
5) General demarcations for determining HAC related marketing functional level selection.

To make the reports more meaningful the FCC should ask for more information and provide more specific guidance for each item requested. The guidance text should clarify what each item is meant too accomplish.

The FCC should consider if any clarification is necessary for how the service providers and manufacturers should report the date range a device is on the market. For example should the report reflect a "snap shot" of the offerings only at the time of the report or should it include models that were available at some point during the year.

Model definition- It would be useful to further define model. At a minimum in their annual reports manufactures and providers should define how they actually distinguish their models. Such distinction will help in monitoring the effectiveness of the rule making.

D. Other Components of Joint Consensus Plan, and Related Proposals (paragraphs 78-88)

79. Other Spectrum Bands. ….apply the Commission's hearing aid compatibility rules to all spectrum bands that are used for the provision of CMRS
Previous FCC action to require HAC for all CMRS bands seems appropriate. However, the FCC position regarding the more general issue of accessibility to all telecommunications by the hearing disabled has not been consistently addressed. The FCC should consider treating other services that are used in the provision of public telephone services consistently with the CMRS rules and vice versa. For example currently Part 15 cordless telephones have Part 68 HAC requirements but no provisions for the Part 20.19 EMI protection. Similarly, CMRS phones may not have all of the equivalent Part 68 provisions such as volume control. As discussed CMRS service providers are now offering Part 15 services, which are integrated into their CMRS operations. In a general sense these Part 15 operations are a commercial radio service which the FCC should consider under it's accessibility efforts.

80 Promotion of standard's development for new bands.
The FCC should encourage standards bodies and industry to investigate alternate standard methods that are more frequency and technology independent. Standards development for each specific band when combined with an FCC rulemaking process is costly and time consuming.

87 Volume control.
The inclusion of volume control is of clear benefit to all users including the hearing disabled. Currently Part 68 rules require such volume control on certain devices. However, if hearing disabled users really want higher acoustic levels there may be conflicts with acoustic safety levels given in other regulations.

Significantly higher levels may be more practical for the inductive coupling modes. PRC is not aware of any audio band electromagnetic safety limits. Inductive coupling levels could be designed to be quite high and help severely disabled hearers.

E. Emerging Technology

91. First, we seek comment generally on the application of our hearing aid compatibility rules to
VoIP applications provided over wireless technologies such as WiFi and other emerging technologies.
Part 6 of the FCC rules contain accessibility requirements that apply to all telecommunication services.

Current FCC CMRS HAC rules only apply to VoIP applications when used under CMRS. However, as the Staff Report point out a user may be connecting to the public networks via an unlicensed service without even being aware. The FCC should consider these radio services in its HAC efforts. It would be desirable for all services that provide connectivity to the public networks to be unified. This includes cordless telephones as well as 15.247 devices.

To date: there has been two areas of HAC rules defining access to wireless telecommunication devices. Part 15 cordless phones have volume control and inductive coupling requirements. CMRS has EMI reduction and inductive coupling requirements. These two rules do not fully overlap or provide a consistent approach. The FCC should consider ways to make them consistent. This is especially true now that carriers are planning for cordless telephone like functionality to compliment their license service connectivity. All voice functionality including VOIP, WIFI, WIMAX and other interfaces should be considered where possible.

93. In addition, we solicit comment as to whether any new hearing aid compatibility rules are
appropriate to address handsets that combine covered mobile voice operation with data services provided over WiFi networks or other emerging technologies.
It seems that current rules assume the separate use of data and voice modes at any instance in time. Current FCC policy allows for manual turn-off of data modes on the phone for compliance testing. Since data modes are

generally not used while at the ear this solution has generally been acceptable to date. Future devices may have voice and data modes that are ubiquitous and allow transmission of data during a voice call. The FCC and standards group will have to address this situation prior to its deployment. In some cases, such as certain modes of 3G technologies, the transmission envelope does not change for this dual mode usage and therefore compatibility may not change.

Appendix B Joint Consensus Plan

C ii …….*multiplied by thirty-three percent shall be rounded down to the nearest whole*
number, except that when a manufacturer produces four to six models, the calculation shall be rounded up to the nearest whole number in……
. Use of 33% never results in an integer number since it is not exactly one third. Consider simply dividing by 3. This methods results in a requirement for only 2 HAC models when the manufacturer makes from 4 to 9 models. A manufacturer would have to make 10 models before three are requiredlso, rounding up at times and down other times is confusing and does not provide an even distribution. Always rounding up would be clearly understood and provide a more even distribution. The impact of rounding up becomes smaller and smaller with an increasing number of models.

C4 The place holder for Teir II and III need to be filled in under this rule making.

d) The phase in for inductive coupling seems unnecessarily complex. It would be preferable in ways for the phase in to be more in line with the EMI rating phase in. PRC does understand that such a change would impact the agreement.

d) 1 iii Use of 33% never results in an integer number since it is not exactly one third. Consider simply dividing by 3. This methods results in a requirement for only 2 HAC models when the manufacturer makes from 7 to 9 models. A manufacturer would have to make 10 models before three are required.

PerrineCrest Radio Consulting Comments to the FCC Staff Report

FCC Staff Report DA 07-4151 under WT Docket 06-203

Para *35. Discussion. In their comments, some consumer groups advocate moving beyond the current criteria for handset compatibility, either by increasing the standard for compatibility from M3/T3 to M4/T4,[88] or by moving towards an ultimate goal of requiring 100% of wireless phones to be fully compatible with hearing aids.[89] They further express concern about low rates of compatibility for GSM handset models, and emphasize that the current requirements set a "low bar" that must not be "neglected or abandoned." ……*

In contrast, industry commenters describe a series of technical challenges that they state make reaching or exceeding the upcoming benchmark problematic for GSM handset models.[92] ATIS points out that handsets using a GSM air interface are more difficult to make compliant than handsets of the same design using a CDMA air interface, because, among other things, GSM signals by nature create more interference, and therefore the formulae used to calculate compliance ratings under the ANSI C63.19 technical standard are different for handset models using a GSM air interface versus those using a CDMA air interface.[93]

PRC would like to emphasize that one of the most important accessibility problems the FCC and industry effort was intended to address was for the compatibility of hearing aids with phones that used transmissions of a "pulsed" nature e.g. TDMA. The bursty nature of some transmissions caused considerable EMI issues for hearing aid users. As pointed out by ATIS CDMA transmissions do not poise as great of EMI challenge by it's physical nature. The FCC should be careful not to allow the dilution of it's rules so that the original intent is not met.

ATIS points out that small GSM candy bar phones have poise particular compliance difficulty to the manufacturers. Under the current rules compliance does not have to be met with candy bar style phones. Furthermore, TAP later points out that many hearing disabled users now desire smart phones, which generally are a larger format and may offer compliance opportunities. Current FCC policy also allows novel design approaches such as developing "integrated" HAC options e.g. extendable speakers that might improve compliance of this class of device. The FCC should encourage industry to pursue such approaches.

Related to this subject ATIS also questions the technical feasibility of the rules. It is not clear from the record that feasibility is not possible for compliance by a manufacturer since there is many design choices a manufacturer has for compliance. However, if the FCC does accept the argument of infeasibility than the FCC and industry should consider

alternative approaches that would improve accessibility and meet the intent of the original rule making. For example, at the time of the original rule making, usage of the devices and accessories were much different than in today's current market. The FCC should consider if alternate usage and accessories can be considered as ways to improve accessibility. Bluetooth ear pieces are now commonly worn by hearing users. The FCC should consider if similar devices would improve accessibility for the hearing disabled? If so, could such usage be counted toward a manufacturer's or service provider's compliance? TAP pointed out that some BlueTooth ear pieces are available now with both acoustic and inductive coupling modes. Encouraging the manufacturers to develop alternate solutions such as hearing disabled friendly ear may prove motivational and of benefit to all parties. Another novel concept that might be of interest is a candy bar size low power WLAN or Bluetooth remote handset that would allow voice exchange and basic remote control of the phone such as dialing. The main higher powered phone could be than kept in a purse or backpack away from the hearing aid.

Para 44 …….Finally, we recommend clarifying that devices marketed by a manufacturer as distinct devices generally are counted as different handset models for purposes of the hearing aid compatibility rules. However, handset models that have no distinguishing variations of form, features, or user capabilities, or that only differentiate units sold to a particular service provider, should be counted as a single handset model for purposes of the hearing aid compatibility rules.
It does not appear that this final recommendation was elaborated on in the NPRM. A clearer definition of what distinguishes a "model" will be helpful.

C. Developments Since the Hearing Aid Compatibility Order
1. Technological Developments Affecting the Hard of Hearing

72. Recommendation. The Bureau recommends that the Commission continue to monitor the
development of new technologies in this area, and seek comment on ways to address the issue of screen displays as a source of interference with hearing aids.
A simple one touch "hot button" to turn off the screen during a voice call would address this concern. Manufacturers should be encouraged to develop such user friendly controls.

76. Recommendation. The Bureau recommends that the Commission seek comment on measures
it could take to encourage standard-setting bodies to develop hearing aid compatibility standards together with technical operating specifications, as they are developed for new air interfaces and frequency bands……
The FCC, industry and standards groups should consider ways to motivate the development of technology that does not cause compatibility problems for hearing

aid users. When such technology is developed the FCC could consider it "compliant de facto" with the acoustic mode rating limits exempting it from the rigor of the demonstration required under section 20.19 of the rules. The FCC has taken such a position on analog air interface. The technology for inductive coupling would have to be treated independently from the acoustic coupling mode.

In addition to the topics addressed in the Staff Report the following two areas may also need to be considered.

The EMI compatibility of Part 15 cordless phones with hearing aids was not addressed in this report.

Currently analog wireless technologies such as AMPs are exempt from the HAC rules, apparently due to assumed EMI compatibility with hearing aids. However, inductive coupling usage may not have been fully addressed. Inductive coupling is highly desirable for hearing aid users and the FCC should consider if rules for analog technologies would be beneficial.